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Nanotechnology 2012: Bio Sensors, Instruments, Medical, Environment and Energy (Volume 3)

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Bicelles: New Lipid Nanosystems for Biomedical Applications

Authors: L. Barbosa-Barros, G. Rodriguez, L. Rubio, M. Cocera, C. Alonso, A. de la Maza, O. Lopez
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Pages: 106 - 109
Keywords: bicelles, lipids, nanosystems, skin
Abstract: Bicellar nanosystems are a fascinating category of morphologically adaptable and versatile lipid assemblies consisting in bilayered disk-shaped nanoaggregates formed in water by long and short alkyl chain phospholipids. Characteristics of these bicellar systems, such as the solely lipid content, small size and its organization in bilayer allow to propose the use of these nanostructures for biomedical purposes. Our results evidenced that, depending on the composition, temperature and other factors, these nanosystems exhibit high structural and morphological versatility. Additionally and, due to the mentioned versatility, bicellar nanosystems are able to modulate the permeability of

anatomic barriers and to incorporate some drugs, providing advantages respect to other lipid systems such as liposomes and micelles (1,2). All this considered, these nanostructures emerge as smart nanosystems with high potential in biomedicine.

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2. L Barbosa-Barros, G Rodriguez, C Barba, M Cocera, L Rubio, J Estelrich, C Lopez-Iglesias, A de la Maza, O Lopez, Bicelles: Lipid nanostructured platforms with potential dermal applications, Small 2011, DOI: 10.1002/smll.201101545

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